ATTORNEY'S DOCKET
UBAT1491

Customer ID: 38396

CLAIMS

Please amend the claims as follows:

1. (Original) A method of obtaining multiple spatially-heterodyned holograms, comprising:

digitally recording, at a first reference beam-object beam angle, a first spatially-heterodyned hologram including spatial heterodyne fringes for Fourier analysis;

digitally recording, at a second reference beam-object beam angle, a second spatially-heterodyned hologram including spatial heterodyne fringes for Fourier analysis;

Fourier analyzing the recorded first spatially-heterodyned hologram by shifting a first original origin of the recorded first spatially-heterodyned hologram to sit on top of a first spatial-heterodyne carrier frequency defined by the first reference beam-object beam angle;

Fourier analyzing the recorded second spatially-heterodyned hologram by shifting a second original origin of the recorded second spatially-heterodyned hologram to sit on top of a second spatial-heterodyne carrier frequency defined by the second reference beam-object beam angle;

applying a first digital filter to cut off signals around the first original origin and define a first result;

performing a first inverse Fourier transform on the first result;

applying a second digital filter to cut off signals around the second original origin and define a second result; and

performing a second inverse Fourier transform on the second result,

wherein the first reference beam-object beam angle is not equal to the second reference beam-object beam angle and a single digital image includes both the first spatially-heterodyned hologram and the second spatially-heterodyned hologram.

2. (Original) The method of claim 1, wherein the spatial heterodyne fringes of the first spatially-heterodyned hologram are substantially orthogonal with respect to the spatial heterodyne fringes of the second spatially-heterodyned hologram.

3. (Original) The method of claim 1, wherein a single pixilated detection device is used to digitally record both the first spatially-heterodyned hologram and the second spatially-heterodyned hologram.

4. (Original) The method of claim 3, wherein the single digital image is generated by the single pixilated detection device.

5. (Original) The method of claim 1, wherein digitally recording the first spatially-heterodyned hologram is performed substantially simultaneously with digitally recording the second spatially-heterodyned hologram.

6. (Original) The method of claim 5, wherein a first reference beam and a first object beam that define the first reference beam-object beam angle are not coherent with respect to a second reference beam and a second object beam that define the second reference beam-object beam angle.

7. (Original) The method of claim 1, wherein digitally recording the first spatially-heterodyned hologram is performed before digitally recording the second spatially-heterodyned hologram.

8. (Original) The method of claim 7, further comprising changing a path of a reference beam after digitally recording the first spatially-heterodyned hologram and before digitally recording the second spatially-heterodyned hologram.

9. (Original) The method of claim 7, further comprising moving a sample that is characterized by both the first spatially-heterodyned hologram and the second spatially-heterodyned hologram after digitally recording the first spatially-heterodyned hologram and before digitally recording the second spatially-heterodyned hologram.

10. (Original) The method of claim 1, wherein the first spatially-heterodyned hologram characterizes a first sample and the second spatially-heterodyned hologram characterizes a second sample.

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11-20 (Canceled)